

## Claims

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ART 34 AMDT**

1. Filter device (1) comprising a bonded network of graphitized carbon for molten steel filtration characterized by the presence of at least two sieve plates (2,4) spaced apart to each other, in particular providing a reservoir chamber 7.  
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2. Device (1) according to claim 1, characterized in that at least one of the surfaces (6,6a) of said sieve plates (2,4) facing together has a surface corrugation in the range of 0.1 mm to 10 mm, in particular 1 mm to 5 mm.  
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3. Device (1) according to claim 1 or 2, characterized that the through holes (3,3a) of the respective sieves plates (2,4) are spaced laterally to each other.  
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4. Device (1) according to one of claims 1 to 3, characterized in that the diameter of the through holes (3,3a) of the respective sieve plates (2,4) is in the range of 1 to 10 mm, in particular 2 to 5 mm.  
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5. Device (1) according to one of claims 1 to 4, characterized in that the geometry of the through holes (3,3a) of said sieve plates (2,4) is circular, ellipitical, triangular, square, rectangular, pentagonal or hexagonal.  
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6. Device (1) according to one of claims 1 to 5, characterized in that the geometry of each of the sieve plates (2,4) is identical.
7. Device (1) according to one of claims 1 to 6, characterized in that the filter is made of ceramic raw material, in particular made of ceramic  
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material comprising a network of graphitized carbon and optionally reinforcing fibers.

8. A method to produce a filter device (1) according to one of claims  
5 1 to 7 comprising the steps

a) pressing a semi-damp mixture comprising ceramic powder and  
optionally a graphitizable bonding precursor, fibers and other additives  
in a hydraulic press to obtain a perforated sieve plate (2,4) in the shape  
of a disk with a protruding frame (5,5a), with a corrugated surface  
10 (6,6a) (peaks and trough) of at least one of the inside surfaces (6,6a) of  
the sieve plate (2,4) ,

b) joining two sieve plates (2,4) to each other using a ceramic or  
carbon binder so that a space or reservoir chamber is formed between  
the two plates (2,4) and

15 c) firing the assembled filter device (1) in reducing or non-oxidising  
atmosphere to a temperature up to 1000 °C , preferably between 600  
°C and 700 °C.

9. The method according claim 8 characterized in that the surface  
20 (6,6a) is roughened in a further step prior or after the firing of the sieve  
plate (2,4).

10. The method according to claim 8 or 9 characterized in that said  
ceramic precursor material contains a graphitizable carbon bonding  
25 precursor, ceramic powder, and optionally other additives.

11. The method according anyone of claims 8 to 10, characterized in  
that said precursor is fired at a temperature in the range of 500 to 2000  
°C, in particular 500 to 1000 °C.